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## HEALTH PHYSICS DEPARTMENT

REPORT FOR MONTH ENDING DECEMBER 31, 1946

**DECLASSIFIED** Per Letter Instructions Of  
AEC 4-6-53

K. Z. Morgan

*MS for N.T. Bray*  
*5/29/53* SUPERVISOR CENTRAL FILES  
ORNL

Date Received: 1/3/47

Date Issued: 1/3/47

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December 31, 1946

MonH-227

CLINTON LABORATORIES

HEALTH PHYSICS DEPARTMENT

by

K. Z. Morgan

In connection with the calibration and study of the properties of particle films used for neutron monitoring, Mr. J. S. Cheka is investigating the fading of proton tracks in the time elapsing between exposure and development. Measurements taken over a period of 24 days show pronounced but somewhat irregular losses in number of tracks. Further investigation of the effect, aimed at eliminating it or reducing it to tolerable proportions, is under way.

Many of the containers used for the shipment of radioisotopes from Clinton Laboratories to various sites have been returned in a more or less badly contaminated state. In nearly all cases the contamination is confined to the interior of the container. A study of recent cases is being conducted under the supervision of Mr. L. B. Emlet to find means to correct the condition. Meanwhile, new suggestions for reducing the contamination are being sent out with current shipments.

The  $C^{14}$  factory was removed from the pile, 12/11/46, by sliding it along a prepared wooden trough and out of the second level south door. The highest reading detected was 2.2 r/hr at eight inches. The tube was carried to the burial ground by trailer.

The  $H^3$  factory was removed from hole 58, 12/12/46, into a metal pipe which was dragged along a prepared trough and out of the south window of the photostat room. The highest radiation detected was 4.5 r/hr at eighteen inches, which was lower than anticipated.

The production of 1400 curies of barium, shipped December 15th, was accompanied by the usual amount of cell contamination. The J-1 blister north of Cell B was reading 20 r/hr at 2" from the closed door and > 100 r/hr at 4" inside the door, with a 100 r/hr probe, on 12/11/46. These readings were reduced to 165 r/hr and 6 r/hr respectively on 12/14/46.

HEALTH PHYSICS DEPARTMENT

K. Z. Morgan

DISTRIBUTION OF EFFORT FOR THE MONTH OF DECEMBER 1946

<u>Personnel</u>	<u>Monthly</u>	<u>Weekly</u>
Physicists (Assoc., Sr. & Prin.)	11	0
Chemist, Elect. Engr., H.P. Supv., Adm. Asst., Assoc. Chem.	5	0
Jr. Physicists & Research Assistants	23	0
Jr. Chemists	1	0
Laboratorians, Technicians & Clerical	0	29
	<u>40</u>	<u>29</u>

Number of Technical personnel added during month: 1  
 Number of Technical personnel terminated during month: 0.

Allocation of time during December in Man-months:

Services

Pocket meters	2	7
Badge and ring meters	2	7
Neutron films	0	1
Hand, shoe and glove counts	1	1
Laundry counting	1	2
Instrument calibration and repair	1	1
Surveys - 100 Area and 706-B	2	0
Surveys - 200 Area	1	0
Surveys - 706-A	3	0
Surveys - 706-C, D	6	2
Surveys - Construction Area	1	0
Mud, Water and Air Surveys	2	0
Consultation	1	0
Technical Instruction	1	0
Trainees	2	0

Research & Development

Improvement and development of instruments	2 $\frac{1}{2}$	0
Instrument tests	1 $\frac{1}{2}$	0
Physio-chemical effects of radiation	1 $\frac{1}{2}$	0
Neutron studies	1 $\frac{1}{2}$	0
Methods of detecting radioactive products in urine	1 $\frac{1}{2}$	2
Preparation of P.P.R.	1	0
Special problems and consultation	2	0
Development of laboratory facilities	1	0
Technical Instruction	1 $\frac{1}{2}$	0
Graduate School	2	0

Administrative

Office Personnel

Vacations and leaves of absence

	2	0
	0	4
	<u>3<math>\frac{1}{2}</math></u>	<u>2</u>
	40	29